

# **REPORT OF ACTIVITIES OF THE DEPARTMENT OF WATER RESOURCES**

**by**

**George T. Qualley, Chief  
Division of Flood Management  
Department of Water Resources  
The Resources Agency  
State of California\***

---

\*Presented before the Central Valley Flood Protection Board June 20, 2008

## WATER CONDITIONS

As of June 1, Water Year 2008 statewide hydrologic conditions were as follows: precipitation, 80 percent of average to date; runoff, 60 percent of average to date; and reservoir storage, 80 percent of average for the date. As of June 3, the date of the last forecast, the projected median April-July runoff for the water supply basins ranged from 78 percent (Kings River) to 49 percent (Tule River). The forecast is down about 1 or 2 percent on average compared to the May 27 forecast. Sacramento River unimpaired runoff observed through May 31, 2008 was about 8.8 million acre-feet (MAF), which is about 55 percent of average. (On May 31, 2007, the observed Sacramento River unimpaired runoff through that date was about 8.7 MAF or about 55 percent of average.)

Spring of 2008 is turning out to be extremely dry. The Water Year 2008, Northern Sierra 8-Station Precipitation Index seasonal total of 34.8 inches is now less than last year's seasonal total of 35.6 inches at this time. March and April 2008 were each the sixth driest of those months on record. For the 8-Stations, the Water Year 2008 combined March through May total precipitation is only 3.4 inches, the driest on record (since 1921). The Water Year 2008, 8-Station Index, October through May total of 34.8 inches is the 22nd driest year out of 88 years of record. The 2-year combined total precipitation for Water Years 2007 (37.2 inches) and 2008 is 72.0 inches, the 9th driest 2-year period on record.

January and early February brought significant amounts of precipitation to California, including heavy snowfall in the mountains. California's large water supply reservoirs received some inflow from these storms; however, the amounts were muted because much of the precipitation fell as snow. Because precipitation was significantly below average last year, dry hydrologic conditions still prevail. Storage in most of the major water supply reservoirs is still well below average. The Sacramento and San Joaquin Valley Water Year Type indexes are both forecasted to be "Critical."

Selected Cities Precipitation Accumulation as of 06/01/2008 (National Weather Service Water Year: July through June)					
City	Jul 1 to Date 2007 - 2008 (in inches)	% Avg	Jul 1 to Date 2006 - 2007 (in inches)	% Avg	% Avg Jul 1 to Jun 30 2007 - 2008
Eureka	33.95	90	35.02	93	89
Redding	24.00	73	22.73	69	71
Sacramento	13.71	77	10.88	61	76
San Francisco	15.55	78	11.63	58	77
Fresno	8.40	76	6.03	55	74
Bakersfield	2.38	37	3.06	48	36
Los Angeles	13.53	90	3.21	21	89
San Diego	7.23	68	3.85	36	67

**Key Reservoir Storage (1,000 AF) as of 06/01/2008**

Reservoir	River	Storage	Avg Storage	% Average	Capacity	% Capacity	Flood Control Encroachment	Total Space Available
Trinity Lake	Trinity	1,663	2,157	77	2,448	68	---	785
Shasta Lake	Sacramento	2,789	3,949	71	4,552	61	-1,763	1,763
Lake Oroville	Feather	1,761	3,041	58	3,538	50	-1,777	1,777
New Bullards Bar Res	Yuba	756	834	91	966	78	-210	210
Folsom Lake	American	613	838	73	977	63	-364	364
New Melones Res	Stanislaus	1,347	1,502	90	2,420	56	-1,073	1,073
Don Pedro Res	Tuolumne	1,344	1,538	0	2,030	66	-668	686
Lake McClure	Merced	452	706	64	1,025	44	-463	573
Millerton Lake	San Joaquin	406	409	99	520	78	-33	114
Pine Flat Res	Kings	522	724	72	1,000	52	-403	478
Isabella	Kern	252	296	85	568	44	-233	316
San Luis Res	(Offstream)	1,087	1,650	66	2,039	53	---	952

The latest National Weather Service Climate Prediction Center (CPC) long-range weather outlook for June 2008, issued May 31, 2008, is forecasting slightly below average precipitation for northeastern California. Average precipitation is forecasted for the rest of the State.

## **GOVERNOR SCHWARZENEGGER PROCLAIMS DROUGHT AND ORDERS IMMEDIATE ACTION TO ADDRESS THE SITUATION**

Following two straight years of below-average rainfall, very low snowmelt runoff and the largest court-ordered water transfer restrictions in state history, Governor Arnold Schwarzenegger on June 5 proclaimed a statewide drought and issued an Executive Order, to address a dire situation where numerous California communities are being forced to mandate water conservation or rationing. The lack of water has created other problems, such as extreme fire danger due to dry conditions, economic harm to urban and rural communities, loss of crops and the potential to degrade water quality in some regions.

The Executive Order directs the Department of Water Resources (DWR) to:

- Facilitate water transfers to respond to emergency shortages across the state.
- Work with local water districts and agencies to improve local coordination.
- Help local water districts and agencies improve water efficiency and conservation.
- Coordinate with other state and federal agencies and departments to assist water suppliers, identify risks to water supply and help farmers suffering losses.
- Expedite existing grant programs to help local water districts and agencies conserve.

## **FLOOD PROJECT INTEGRITY AND INSPECTION BRANCH**

The 2007 Annual Report of the Flood Control Project Maintenance and Repair is complete and is being submitted to members of the Flood Protection Board under separate cover. The report can be found at:

<http://dfmdev1.water.ca.gov/dfm/hafoo/fpiib/fpinss/>. The report reflects the findings of the fall 2007 maintenance inspections, which used interim vegetation criteria requiring trimming and thinning sufficient to allow open visibility and access for inspections and flood fight efforts. The Board was briefed on these inspection results at its March meeting. Rigorous application of all inspection criteria and a new methodology to provide objective and consistent overall ratings resulted in overall Unacceptable ratings for 64 of the 107 local maintaining agencies, although maintenance efforts generally showed improvement.

## **FLOOD PROJECT MODIFICATIONS & PERMITS BRANCH**

### **Early Implementation Program**

**Funding Agreements** for Sacramento Area Flood Control Agency, Levee District No. 1 of Sutter County, and Reclamation District No. 2103 are undergoing legal review at the Department of General Services. We expect to have full contract execution and first quarterly work plan invoices paid prior to the end of the current fiscal year.

**Three Rivers Levee Improvement Authority** now has all three Segments of the Feather River Levee Improvement Project under construction with the ground breaking ceremony for the Segment 2 setback levee conducted on May 28, 2008. Staff has processed approximately \$38 million of invoices to acquire real estate and continue construction.

**Levee District No. 1 of Sutter County (LD1)** will submit a quarterly work plan and request for payment as soon as the funding agreement is fully executed. The Board of Directors passed a Resolution of Necessity to start the condemnation of several properties. LD1 is still in negotiation with the Corps regarding environmental concerns. Although construction of the setback levee will not start until April 2009, the District will let bids beginning in August for utility relocations.

**Reclamation District No. 2103** anticipates submitting a quarterly work plan in mid-June. Bid solicitation begins June 9, bid opening is scheduled for July 3, and award on July 10. Construction is scheduled to start around July 17 and due to be completed in October 2008. Due to permitting delays, erosion sites within the railroad right-of-way may not be repaired until next year.

**Sacramento Area Flood Control Agency** completed the Phase 1 portion of project Reaches 1 and 2 in 2007 for the Natomas Cross Canal (NCC) component of the Natomas Levee Improvement Project. Bids were opened for Phase 1B, Reaches 2 to 3, on June 5, 2008, and the apparent low bid is within budget for the project. Sacramento Area Flood Control Agency (SAFCA) will be submitting the real estate plan within the month of June 2008, and credit invoices have been submitted in draft pending execution of the funding agreement.

Project funding for the four Early Implementation Program projects are:

- Three Rivers Levee Improvement Authority – Total cost \$201.3 million, estimated maximum State cost share: \$138.5 million.
- Levee District No. 1 of Sutter County: Lower Feather River Setback Levee at Star Bend – Total cost: \$14.7 million, estimated maximum State cost share: \$7.35 million
- Reclamation District No. 2103: Bear River North Levee Rehabilitation Project – Total cost: \$14.7 million, estimated maximum State cost share: \$7.35 million
- Sacramento Area Flood Control Agency: Natomas Levee Improvement Program (NLIP) Early Start Program – Total NLIP cost \$227 million; total cost of Natomas Cross Canal South Levee element of NLIP: \$73.4 million; estimated maximum State cost share: \$49 million.

### **Local Levee Feasibility Studies Program**

### **Local Levees Urgent Repair Program**

In addition to the Early Implementation Projects, the Branch is implementing these two programs for the non-federal levees. These are Statewide competitive programs (excluding the Sacramento/San Joaquin Delta, which is covered by other programs) to provide state cost share funding to local agencies for projects to evaluate and make urgent repairs to non-federal levees, especially those at risk of FEMA decertification. Staff is now in the process of receiving grant applications for the program; the application deadline is June 30, 2008. Program Guidelines and the Program Solicitation Package (PSP) were posted on the FloodSAFE website as of April 28, 2008. Staff held a public workshop and webcast on May 14, 2008 in the Resources Building Auditorium, during which the Program was described. During the workshop, staff answered questions from the audience and continue to answer questions via daily telephone calls and e-mail from interested applicants. The webcast video is posted for viewing on the FloodSAFE website.

## **PROJECT DEVELOPMENT BRANCH**

### **PROJECTS AND STUDIES TO IMPROVE FLOOD PROTECTION FOR SACRAMENTO**

#### **Joint Federal Project at Folsom**

Progress on the Folsom Dam Modifications Project (also known as the Folsom Dam Joint Federal Project) continues. In particular:

- The Bureau of Reclamation reports that the contract for Phase 1 excavation of the spillway is over 85 percent complete. Plans and Specifications are nearing completion and on schedule for a Phase 2 excavation contract to be awarded this fall.
- The U. S. Army Corps of Engineers (Corps) has released a draft 35 percent design package for the control structure, chute, and stilling basin. Review and refinement of this design package continues. After approval of the 35 percent design, the Corps will concentrate efforts on completing the design of the control structure. Construction of the control structure is scheduled to begin in 2010.
- Supplemental environmental documents that were prepared by the Bureau of Reclamation and that describe a cofferdam to facilitate construction of the stilling basin are on the agenda to be considered by this Board now.
- The Corps continues to evaluate methodologies by which the control structure approach channel can be constructed to minimize construction risk and cost. Under consideration are various types of cofferdams for constructing the channel in the dry, and various methods of constructing the channel in the wet.
- Negotiations are underway to modify the Board's existing Project Cooperation Agreement with the Corps and SAFCA.

While there is an enormous amount of work left to accomplish, the project partners continue to work together to eliminate obstacles as fast as they arise. The project is on schedule for completion around the year 2015.

## **Folsom Dam Raise**

- Work on the Folsom Dam Raise Element of the project is temporarily on hold until significant progress is made on construction of the auxiliary spillway. Design efforts are estimated to resume in 2011.
- The Corps has initiated design of the environmental restoration element of the project.

## **American River Common Features Project**

The American River Common Features Project continues to improve the levee system along the American and Sacramento Rivers in Sacramento. Current activities by key project elements are:

- Design for closing gaps in the slurry wall left at the locations of deep utility crossings or other major infrastructure in the 24 miles of slurry wall along the American River levees has been initiated. These repairs are commonly referred to as the WRDA 1996 Remaining Sites work.
- Raising of 4,300 feet of levee in the Mayhew area and installation of a closure structure on the Mayhew Drain is well under way. This work was authorized by WRDA 1999.
- Design for raising and widening three levee sections at Jacob's Lane, Howe Avenue, and Highway 160 has been commenced. The 60 percent plans for the Jacob Lane contract have been completed. This work was authorized by WRDA 1999 and commonly referred to as the North Area Contracts work.
- The General Re-Evaluation Report is progressing according to schedule and is expecting to have a F3 conference this fall.
- An emergency repair project at the Pritchard's Lake pump station on the east levee bank (River Mile 75.1) of the Sacramento River is currently under construction (Permit 18112-Rev GM). This work is not yet been authorized by Congress. The Board has requested Section 104 credit from the Corps.

**South Sacramento County Streams Project** The South Sacramento County Streams Project will provide increased flood protection for the south area of Sacramento

- Construction along Elder and Florin Creeks between Franklin Boulevard and Morrison Creek began this spring.
- Later this spring, construction will begin along a segment of Unionhouse Creek west of Franklin Boulevard.
- Design for future flood control features along Unionhouse Creek has been initiated and should be completed later this year.

## **PROJECTS AND STUDIES TO IMPROVE FLOOD PROTECTION FOR OTHER URBAN AREAS**

### **West Sacramento Project**

- Geotechnical analysis for the repair of the two levee slips is near completion. After analysis is complete, design and construction will follow.
- The Corps has decided that General Re-evaluation Report preparation for future work to provide 200-year level of protection for the area will need to be done under a feasibility cost sharing agreement. The Project Management Plan for the study is currently being developed by the Corps.

### **Yuba River Basin Project**

- General re-evaluation of the Yuba River Basin Project continues. The F4 conference was held May 29, 2008, where it was concluded that there is a Federal interest in a multi-purpose project that strengthens levees in-place, provides setback levees, and restores river floodplains for both ecosystem restoration and flood risk management.
- The Marysville Ring levee improvement is a separable element of the Yuba River Basin Project. Authorization to initiate design and construction simultaneously with the GRR is underway. If authorized, Marysville will be afforded a high level of protection significantly sooner than originally scheduled. The Corps proposes to award a contract for design in 2008 and expects execution of a Project Cooperation Agreement with The Reclamation Board to commence construction of the Ring Levee repairs in Fall 2008. Completion of the Ring Levee repairs could potentially be done in 2010.

### **Mid-Valley Area Levee Reconstruction Project**

The ongoing Mid-Valley Reconstruction Project will restore levees to design standards on the Feather and Sacramento Rivers and tributaries just north of Sacramento. Project sites extend from the Tisdale Bypass to the Sacramento Bypass and include levees of the Sacramento River, Feather River, Yolo and Sutter Bypasses, and Knights Landing Ridge Cut. Project partners include the Corps, the CVFPB, and seven local agencies and Counties.

In 1996, the Corps completed a Design Memorandum that designates approximately 18.3 miles of levees as economically justified for reconstruction. Since that time, several construction projects have upgraded levees with stability berms, slurry walls, and toe drains. Total project expenditures are currently about \$28.8 million. The Corps is revising a Limited Reevaluation Report (LRR) for approval in 2009. Environmental Documents must also be revised. Construction contracts for an additional 12 miles of levee upgrades could go out in fall 2009 with construction following in 2010, if the LRR is approved.



## **Sutter County Feasibility Study**

The Corps and the Non Federal partners have agreed on a scope, cost, and schedule for the Feasibility Study. Agreement negotiations are currently underway with the Corps, State, and Sutter-Butte Flood Control Agency.

Following are tentative dates for study deliverables:

- Corps Alternative Review Conference (F4) – July 2010 (The completion of the evaluations for the final array of alternatives to be presented in the Feasibility Study)
- Corps Alternative Formulation Briefing (F4A) – January 2011 (The Corps will identify the recommended plan and the NED plan)
- Corps Draft Feasibility Report and EIS/EIR (F5) – June 2011
- Corps Final Feasibility Report (F8) – July 2012

## **Lower San Joaquin River Feasibility Investigation**

The Corps completed a reconnaissance scope study of flood damage reduction and ecosystem restoration improvements along the Lower San Joaquin River in September 2004. Although it was concluded that there was sufficient federal interest for continuing into the feasibility investigation phase, further coordination failed to generate sufficient local interest to continue with the Project Management Plan (PMP) and Feasibility Cost Sharing Agreement (FCSA) at that time.

In mid-2007, representatives from the San Joaquin Area Flood Control Agency (SJAFCA – San Joaquin County, City of Stockton, and San Joaquin County Flood Control Agency), and cities Manteca and Lathrop identified their interest in becoming the local sponsor for the feasibility investigation. On 17 November 2007, The Reclamation Board sent a letter to the Corps stating its interest to be a non-Federal sponsor for the study.

Since the end of 2007, the CVFPB, DWR, and local sponsors have been working with the Corps in their development of the PMP and FCSCA. DWR is also preparing a Local FCSCA to define the responsibilities between the State and local sponsor(s) consistent with the FCSCA. It is expected that the FCSCA and Local FCSCA will be ready for signature in the summer of 2008. The estimated total study cost is likely to be approximately \$8 million, with the State's share about \$2 million. Initiation of the investigation will depend on availability of adequate Federal funds. The study will take about 36 months to complete.

## **Lower Cache Creek, Woodland Area Feasibility Study**

The Corps is exploring the reformulation of alternatives and scoping for a new Feasibility Study for this project. Scoping meetings are planned for Spring-Summer of 2008. The Corps estimates that the new Feasibility Study will be complete in 2011 with design of a selected alternative to commence in 2012.

## **West Stanislaus County, Orestimba Creek Feasibility Study**

On May 28, 2008, there was a site visit to the project area with Congressman Dennis Cardoza; U.S. Army Corps of Engineers Colonel Tom Chapman; Central Valley Flood Protection Board (CVFPB) Member, Rose Marie Burroughs; CVFPB Executive Officer, Jay Punia; and Chief of the Division of Flood Management, George Qualley in attendance.

The site visit included discussion of the flooding problems within the project area, video of the effects of the 1995 and 1998 floods, discussion on the proposed alternatives, and walk-through of the project area. Congressman Cardoza and Sacramento District Commander Colonel Chapman both expressed their support for the study.

1. Current Tasks: The hydraulic models for the without project condition are complete. Work has been initiated on the hydraulic models and formulation of the project alternatives. The NED plan and a locally preferred plan will be identified by September. Environmental documentation will continue with the evaluation of the alternative effects.
2. Schedule: The team is scheduled to identify the plan which sets the limits for federal cost share (The NED Plan) by September 08. A workshop with the public will be held at this time to inform the public. The Corps F4 Milestone Conference which lays out the alternative evaluation is scheduled for Feb 09.
3. Status: The Study has two remaining alternatives – an upstream dry dam and a downstream levee system. These alternatives will be further evaluated and compared to identify the plan that reasonably maximizes the NED (National Economic Development) benefits. The additional data required for the alternative evaluation includes: determination of flood damage reduction benefits (damages prevented); modeling with-project condition; real estate estimates and habitat mitigation requirements.
  - The upstream dry dam provides a high level of flood protection for the entire floodplain but has many unknown factors that must be addressed. These issues include unknown foundation conditions, potential dam failure threats to the California Aqueduct, and opposition from Resource Agencies to potential negative effects to the Sycamore Alluvial Woodland. The team is developing a more detailed cost estimate, including mitigation costs, to inform the sponsor and the locals. The team anticipates this cost will be substantially higher than the downstream levee alternative.
  - The downstream levee alternative consists of a "Chevron Levee" which protects the town of Newman, and potentially includes modification to the Orestimba Creek channel to increase capacity, which would increase the flood protection for the agricultural area along the creek. An analysis will be done to determine if the channel modifications are economically justified. This alternative will not have the support of the local sponsor if it does not include protection for the agricultural areas.

## **OTHER SIGNIFICANT DEVELOPMENTS**

### **Hamilton City Project**

David Ford Consultants have completed an Interior Drainage Study for drainage on the landside of the setback levee.

The Corps has come to a satisfactory agreement with U.S. Fish and Wildlife Service on impacts to existing Valley Elderberry Longhorn Beetle habitat that would be damaged during construction of the project. A formal Biological Opinion should be available in mid-June.

The H&H study of level of protection the project will provide is at the LA District for Independent Technical Review. The level has not changed since the feasibility phase.

The Corps is surveying for bank rock protection. Rock revetment may be necessary for 300 feet upstream and downstream of the Highway 32 bridge. The Corps anticipates to have completed 60 percent design by the end of the federal Fiscal Year.

## **STATEWIDE GRANTS BRANCH**

### **Flood Control Subventions Program**

#### **AB1147 Implementation Regulations**

Draft regulations to implement the requirements of Assembly Bill 1147 have been developed and submitted to the Office of Administrative Law. The regulations apply to federal projects authorized by the State after January 1, 2002. They affect the State cost share eligible for reimbursement. A forty-five day public comment period will begin in mid-June and extend through July to solicit comments on the draft regulations.

## **FLOODPLAIN MANAGEMENT BRANCH**

### **Central Valley Floodplain Evaluation and Delineation Plan- Recent Accomplishments:**

- The four regional 5-year floodplain evaluation A-E contracts were awarded in January 2008.
- The Floodplain Management Assistance A-E contract was awarded in April 2008.
- Floodplain Mapping Project Management and Floodplain Management Assistance A-E contract was awarded in April 2008.
- Topographic surveys have been conducted using LIDAR for 8,200 square miles of the Central Valley using NAVD 88 as the vertical datum.
- Digital photos have been taken of 9,100 square miles using six inch pixel definition.
- A preliminary project management plan and quality assurance/quality control plan have been developed.

The following activities will be initiated this summer:

- Post processing of the LIDAR data will be initiated.
- Bathymetry data where required will be obtained.
- Bridges and other river and floodplain structure survey data will be collected using NAVD 88.
- Base topographic maps will be completed as needed.

### **Senate Bill 5- Best Available Maps**

Senate Bill 5 Section 9610 requires that the Department of Water Resources assemble and distribute "Best Available Maps" reflecting best available 100-year and 200-year floodplain data for cities and counties within the drainage of the Sacramento and San Joaquin Basin by July 1, 2008.

DWR has assembled the required maps and map books will be sent by July 1, 2008 to 32 counties within the Sacramento and San Joaquin Basin. In addition to map books for 32 counties, digital data in the form of CDs will be sent to 91 cities located within the 32 counties.

In May 2008, the Central Valley Flood Protection Board was provided a preliminary set of map books for review and comment.

By July 1, 2008, a link to the Best Available Maps will be located on the Central Valley Flood Protection Board website along with the DWR Floodplain Management website.

## **LEVEE REPAIRS BRANCH**

### **Sacramento River Bank Protection Project (SRBPP)**

As a result of discussions with the Sacramento Area Flood Control Agency (SAFCA), the Corps is evaluating the need for repairing five additional sites on the Sacramento River in the reach from River Mile 56.0 to River Mile 60.3 on the left bank. The Corps has completed designs for eight sites where there are no encroachment issues and is in the process of issuing awards for construction.

The Corps has initiated scoping for the EIS/EIR for 80,000 lineal feet authorized under WRDA 2007. The tentative schedule for Record of Decision is May 2010.

### **San Joaquin River Flood Protection Critical Repair Sites**

Engineering and environmental designs for three sites; San Joaquin River Mile 42.3R, Paradise Cut (levee mile 3.8L) and Mormon Slough (levee mile 33.0R), have been completed. DWR is in the process of obtaining permits for construction.

Environmental assessment for the Lower San Joaquin Levee District Chowchilla Bypass Slurry Wall Project is in progress. A draft Corps/Central valley Flood Protection Board Work Agreement for the Lower San Joaquin Levee District San Joaquin reaches upstream and downstream of the Chowchilla Bypass is under review and will be presented to the Board at the July Meeting. DWR and the Corps have agreed to a joint solution to seepage and 2006 flood damage repairs which will require DWR to pay about \$5 million for improvements towards PL84-99 repairs.

### **2006 Public Law (PL) 84-99 Rehabilitation Assistance Program**

In all, there are 22 Order 2 and 139 Orders 3, 4 and 5 remaining sites to be repaired. The Corps is lead agency for PL84-99 repairs and is moving forward to start repairs on 70 sites. DWR is providing environmental permitting, rights-of-way and borrow materials for these sites.

## **LEEVE EVALUATIONS BRANCH**

The Levee Evaluations Branch was created to perform geotechnical levee evaluations on about 350 miles of urban levee. An urban levee is defined as protecting at least 10,000 people. The geotechnical levee evaluations will focus on the urban project levees in geographic areas of Reclamation District (RD) 17, RD 404, Natomas, West Sacramento, Marysville, Woodland, Davis, Stockton, MA9, American River, Sacramento, the Sutter Basin, and RD 784. This program is in the process of expanding to other areas within the Sacramento and San Joaquin Flood Control Projects with the Bond funding.

The purpose of these evaluations is to assist in developing a levee certification program based on geotechnical data, provide consistent formats for data (and associated data exchange), and provide an evaluation of the levee system based on geotechnical data. This evaluation will be conducted with the goal of providing 200-year level of protection in urban areas and the design profile level of protection in rural areas using the U.S. Army Corps of Engineers (Corps) underseepage criteria.

### **General**

1. The Levee Evaluations Branch is working closely with RD 17, Natomas (SAFCA and RD 1000), Three Rivers, LD 1, and others within the Department and the Corps to review issues concerning early implementation projects.
2. Weekly coordination meetings with the USACE continue so that subsurface explorations plans are approved in advance of work and efforts are not duplicated.
3. DWR executed contracts for the geotechnical evaluation of non-urban project levees in the Sacramento and San Joaquin River flood control systems on May 12, 2008.
4. The ninth Independent Consulting Board Meeting concerning levee evaluations will be held on June 17-18, 2008.

**The work performed in May is broken into three geographic urban levee areas of North, Central, and South is as follows:**

## **North**

1. *Sutter Basin*: Comments from the Draft Phase 1 Geotechnical Evaluation Report (P1GER) QA/QC review have been received from DOE and are being incorporated into an updated version of the P1GER for distribution to local stakeholders in June. In May, DWR presented P1GER results to the Sutter Board of Directors. USACE is still reviewing this report. Additional supplemental explorations are planned for June 2008. Biological clearances are currently being performed.
2. *Marysville*: Final USACE review comments to the Draft P1GER have been received and are being incorporated into an updated version of the P1GER for distribution to local stakeholders in June. Currently three additional piezometers are in the process of being installed and additional supplemental explorations are being drilled.

## **Central**

1. The Supplemental Geotechnical Data Report (SGDR) for West Sacramento is underway. The draft Phase 1 Geotechnical Data Report (P1GDR) for the Sacramento River east bank levees (from the confluence with American River southward to Freeport) has been delivered to DWR during the middle part of May. This report is undergoing an internal QA/QC process and Corps review, and will be updated for local stakeholder release and review in July 2008.
2. A draft P1GDR for the Natomas East Main Drainage Canal (NEMDC) portion of the Natomas levees was completed and is expected to be delivered to DWR during the month of June. The P1GER for NEMDC is underway and is expected to be delivered to DWR during the month of June. Several planning meetings and a design workshop were conducted with the Corps, DWR, SAFCA, and stakeholders regarding the remediation of the levee system in Natomas. Review of the extensive geotechnical information for these remaining areas is underway.
3. Field explorations commenced along the American River levees during the latter part of May and are expected to be completed during the month of June. There will be a relatively limited number of explorations due to the existence of cutoff walls already constructed along a significant portion of the American River levees.
4. Geomorphology maps reflect updating of Davis' geomorphology data based on the recent boring log data. P1GDR is being developed for the Davis basin.
5. Locations of P1 borings are being surveyed in Woodland. Laboratory testing of P1 boring samples are in the selection process.
6. Bathymetric survey data collected along portions of the American and Sacramento Rivers has been delivered to DWR.

## **South**

1. Installation of piezometers is planned for SJAFCA in June 2008.
2. The draft Phase 1 Geotechnical Data Report (P1GDR) for SJAFCA was delivered to DWR in the latter weeks of May 2008. This report is undergoing an internal QA/QC process and Corps review. The report will then be updated for release to local stakeholders reviewers in July 2008.
3. A draft P1GDR for RD 404 is expected to be delivered to DWR during the latter part of June.
4. Bathymetric survey data collected along portions of the San Joaquin and Calaveras Rivers has been delivered to DWR.